CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/WNo.10/HG/WMM/Gradation/2015-16 28.12.2015

GRADATION FOR WMM
MORTH TABLE-400-11

Customer : **Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.

Agency : **Mr. H. Gangadhar,** Contractor, Bangalore.

Name of Work : Pot hole filling in Ramachandrapura Area in Ward No. 10 (Doddabommasandra), Vidyaranyapura Sub Division, BBMP, Bangalore.

Reference : EE/BTP/BBMP/E-PMT/WO/181/2015-16 Dated: 19.12.2015

Date of Testing : 28.12.2015

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **7560**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	285	285	3.8	96.2	95-100
22.4	2425	2710	35.8	64.2	60-80
11.2	1510	4220	55.8	44.2	40-60
4.75	825	5045	66.7	33.3	25-40
2.36	910	5955	78.8	21.2	15-30
0.600	555	6510	86.1	13.9	8-22
0.075	525	7035	93.1	6.9	0-8

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Note:

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Job No.: CTCE/BBMP/WNo.10/HG/WMM/AIV/2015-16

28.12.2015

Aggregate Impact Value

IS: 2386 Part IV

Customer	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. H. Gangadhar,** Contractor, Bangalore.
Name of the Work	Pot hole filling in Ramachandrapura Area in Ward No. 10 (Doddabommasandra), Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/WO/181/2015-16 Dated: 19.12.2015
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	28.12.2015

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	385	387	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	87	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	300	
4	Aggregate Impact value = percent fines	22.08	22.48	
	100* (W_2/W_1)%			22.28

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/WNo.10/HG/WMM/S-T/2015-16 28.12.2015

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
Agency	**Mr. H. Gangadhar,** Contractor, Bangalore.
Name of Work	Pot hole filling in Ramachandrapura Area in Ward No. 10 (Doddabommasandra), Vidyaranyapura Sub Division, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-PMT/WO/181/2015-16 Dated: 19.12.2015
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	28.12.2015

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Result : Flakiness Index = **11.62%**

Elongation Index = **13.79%**

Result : Combined Flakiness & Elongation index 25.41%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/WNo.10/HG/BC/Bitumen/2015-16 08.01.2016

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. H. Gangadhar,** Contractor, Bangalore.
NAME OF THE WORK	Pot hole filling in Ramachandrapura Area in Ward No. 10 (Doddabommasandra), Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	EE/BTP/BBMP/E-PMT/WO/181/2015-16 Dated: 19.12.2015
SAMPLE I/D	Roads in Ramachandrapura Area, Ward No. 10
DATE OF TESTING	08.01.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	27.00
7. Bitumen content in %	5.20	5.40
8. Average	**5.30**	

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Job No.: CTCE/BBMP/WNo.10/HG/BC/Gradation/2015-16 08.01.2016

GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IS:2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Vidyaranyapura Sub Division, BBMP, Bangalore.
AGENCY	**Mr. H. Gangadhar,** Contractor, Bangalore.
NAME OF THE WORK	Pot hole filling in Ramachandrapura Area in Ward No. 10 (Doddabommasandra), Vidyaranyapura Sub Division, BBMP, Bangalore.
REFERENCE	EE/BTP/BBMP/E-PMT/WO/181/2015-16 Dated: 19.12.2015
SAMPLE I/D	Roads in Ramachandrapura Area, Ward No. 10
DATE OF TESTING	08.01.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	45.12	9.52	9.52	90.48	79-100
9.5	40.21	8.48	18.00	82.00	70-88
4.75	66.98	14.13	32.13	67.87	53-71
2.36	95.43	20.13	52.27	47.73	42-58
1.18	45.72	9.65	61.91	38.09	34-48
0.6	42.16	8.89	70.81	29.19	26-38
0.3	35.26	7.44	78.24	21.76	18-28
0.15	33.85	7.14	85.39	14.61	12-20
0.075	45.12	9.52	94.91	5.09	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	46.32	9.79	9.79	90.21	79-100
9.5	37.85	8.00	17.79	82.21	70-88
4.75	72.15	15.25	33.05	66.95	53-71
2.36	57.62	12.18	45.23	54.77	42-58
1.18	75.43	15.95	61.18	38.82	34-48
0.6	35.16	7.43	68.61	31.39	26-38
0.3	27.98	5.92	74.53	25.47	18-28
0.15	34.62	7.32	81.85	18.15	12-20
0.075	53.64	11.34	93.19	6.81	4-10

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